

18. If this were a purely competitive labor market, the number of workers hired and the wage rate in equilibrium would be .

- (a) 4000 and \$14
- (b) 4000 and \$8
- (c) 6000 and \$10
- (d) 8000 and \$12

19. If this were a monopsonistic labor market, the number of workers hired and the wage rate in equilibrium would be

- (a) 4000 and \$14
- (b) 4000 and \$8
- (c) 6000 and \$10
- (d) 8000 and \$12

20. Suppose an inclusive union seeks to maximize the employment of workers with the monopsonist. If successful, the number of workers employed and the wage rate would be

- (a) 4000 and \$14
- (b) 6000 and \$12
- (c) 6000 and \$10
- (d) 8000 and \$12

21. If the market were characterized as a bilateral monopoly, the number of workers hired and the wage rate in equilibrium would be

- (a) 6000 and \$10
- (b) 4000 and \$14
- (c) 4000 and \$8
- (d) indeterminate

22. The major reason that major league baseball players receive an average salary of over \$1 million a year and teachers receive an average salary of about \$40,000 a year can best be explained in terms of

- (a) noncompeting labor groups
- (b) compensating differences
- (c) lack of job information
- (d) discrimination

23. The fact that unskilled construction workers typically receive higher wages than bank clerks is best explained in terms of

- (a) noncompeting labor groups
- (b) compensating differences
- (c) geographic immobilities
- (d) union restraints

24. Shirking can be considered to be a principal-agent problem because

- (a) work objectives of the principals (the workers) diverge from the profit objectives of the agent (the firm)
- (b) profit objectives of the principal (the firm) diverge from the work objectives of the agents (the workers)
- (c) the firm is operating in a monopsonistic labor market
- (d) the firm pays efficiency wages to workers in a labor market

25. A firm pays an equilibrium wage of \$10 per hour and the workers produce 10 units of output an hour. If the firm

adopts an efficiency wage and it is successful, then the wage rate for these workers will

- (a) rise and output will fall
- (b) fall and output will rise
- (c) rise and output will rise
- (d) fall and output will fall

## PROBLEMS

1. Suppose a single firm has for a particular type of labor the marginal-revenue-product schedule given in the following table.

Number of units of labor	MRP of labor
1	\$15
2	14
3	13
4	12
5	11
6	10
7	9
8	8

a. Assume there are 100 firms with the same marginal-revenue-product schedules for this particular type of labor. Compute the total or market demand for this labor by completing column 1 in the following table.

(1) Quantity of labor demanded	(2) Wage rate	(3) Quantity of labor supplied
_____	\$15	850
_____	14	800
_____	13	750
_____	12	700
_____	11	650
_____	10	600
_____	9	550
_____	8	500

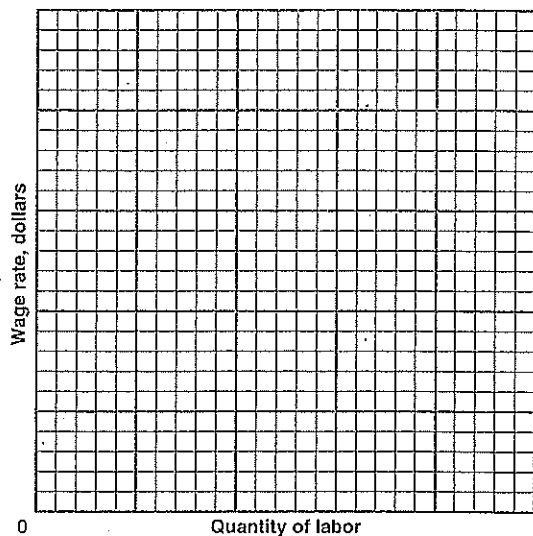
b. Using the supply schedule for labor given in columns 2 and 3,

- (1) what will be the equilibrium wage rate? \$\_\_\_\_\_
- (2) what will be the total amount of labor hired in the market? \_\_\_\_\_

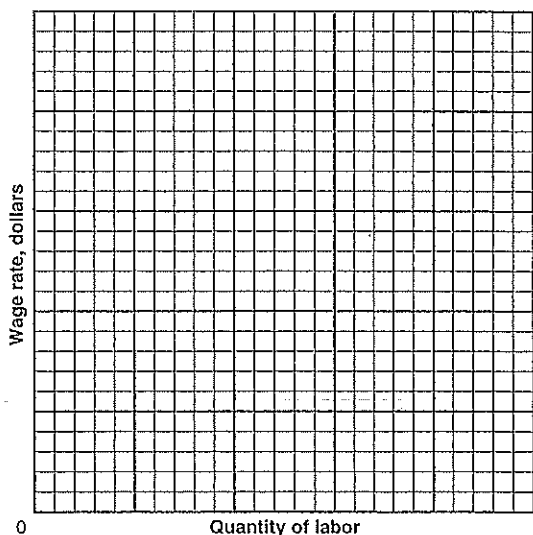
c. The individual firm will

- (1) have a marginal labor cost of \$\_\_\_\_\_.
- (2) employ \_\_\_\_\_ units of labor.
- (3) pay a wage of \$\_\_\_\_\_.

d. On the following graph, plot the market demand and supply curves for labor and indicate the equilibrium wage rate and the total quantity of labor employed.



e. On the following graph, plot the individual firm's demand curve for labor, the supply curve for labor, and the marginal-labor-cost curve which confronts the individual firm, and indicate the quantity of labor the firm will hire and the wage it will pay.



f. The imposition of a \$12 minimum wage rate would change the total amount of labor hired in this market to \_\_\_\_\_.

2. In the following table, assume a monopsonist has the marginal-revenue-product schedule for a particular type of labor given in columns 1 and 2 and that the supply schedule for labor is that given in columns 1 and 3.

(1) Number of labor units	(2) MRP of labor	(3) Wage rate	(4) Total labor cost	(5) Marginal labor cost
0		\$ 2	\$ _____	
1	\$36	4	_____	\$ _____
2	32	6	_____	_____
3	28	8	_____	_____
4	24	10	_____	_____
5	20	12	_____	_____
6	16	14	_____	_____
7	12	16	_____	_____
8	8	18	_____	_____

a. Compute the firm's total labor costs at each level of employment and the marginal labor cost of each unit of labor, and enter these figures in columns 4 and 5.

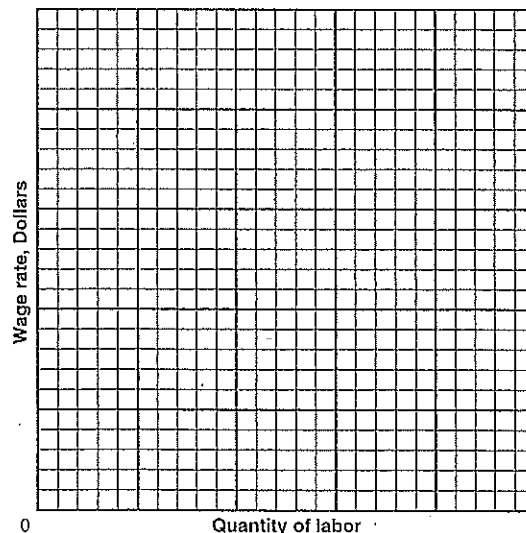
b. The firm will

1. hire \_\_\_\_\_ units of labor.

2. pay a wage of \$ \_\_\_\_\_.

3. have a marginal revenue product for labor of \$ \_\_\_\_\_ for the last unit of labor employed.

c. Plot the marginal revenue product of labor, the supply curve for labor, and the marginal-labor-cost curve on the following graph and indicate the quantity of labor the firm will employ and the wage it will pay.



d. If this firm's labor market were competitive, there would be at least \_\_\_\_\_ units hired at a wage of at least \$ \_\_\_\_\_.

3. Assume that the employees of the monopsonist in Problem 2 organize a strong industrial union. The union demands a wage rate of \$16 for its members, and the

monopsonist decides to pay this wage because a strike would be too costly.

- a. In the following table, compute the supply schedule for labor that now confronts the monopsonist by completing column 2.

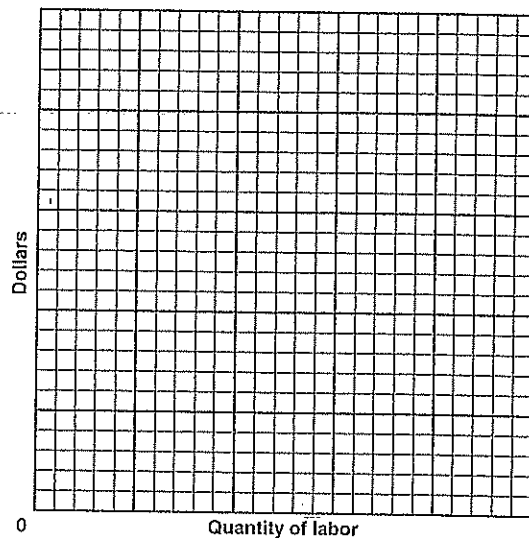
(1) Number of labor units	(2) Wage rate	(3) Total labor cost	(4) Marginal labor cost
0	\$_____	\$_____	
1	_____	_____	\$_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____

- b. Compute the total labor cost and the marginal labor cost at each level of employment and enter these figures in columns 3 and 4.

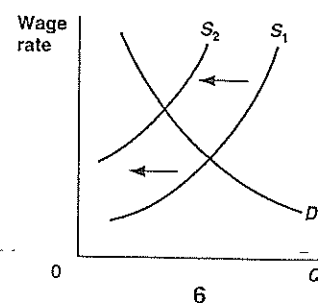
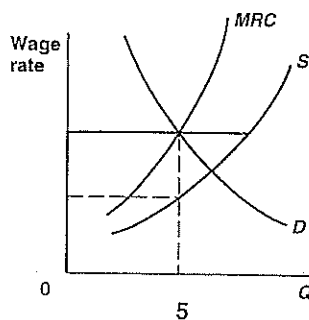
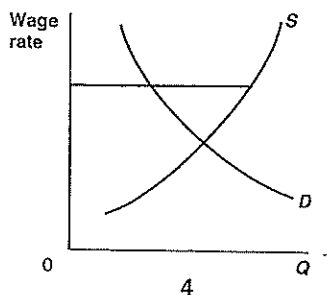
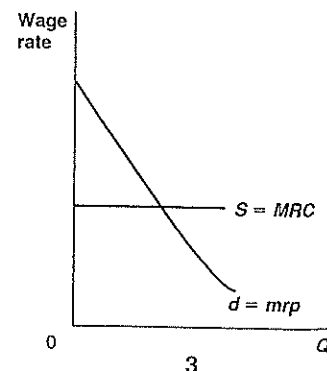
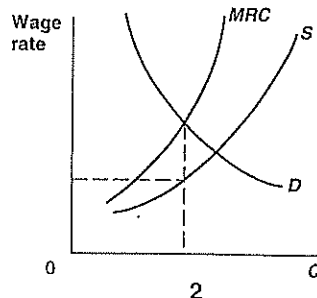
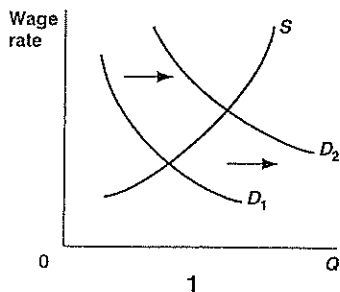
- c. The firm will hire \_\_\_\_\_ units of labor, pay a wage of \$\_\_\_\_\_, and pay total wages of \$\_\_\_\_\_.

- d. As a result of unionization, the wage rate has \_\_\_\_\_, the level of employment has \_\_\_\_\_, and the earnings of labor have \_\_\_\_\_.

- e. On the graph below plot the firm's marginal revenue product of labor schedule, the labor supply schedule, and the marginal-labor-cost schedule. Indicate also the wage rate the firm will pay and the number of workers it will hire.



4. Match the following descriptions to one of the six graphs.



- a. A bilateral monopoly Graph \_\_\_\_\_
- b. The supply and demand for labor for a purely competitive firm Graph \_\_\_\_\_
- c. The labor strategy used by a craft union to raise wages Graph \_\_\_\_\_
- d. A monopsonistic labor market Graph \_\_\_\_\_
- e. The strategy used by an industrial union to raise wages above a competitive level Graph \_\_\_\_\_
- f. A strategy used by a union to get people to buy union-made products Graph \_\_\_\_\_

### ■ SHORT ANSWER AND ESSAY QUESTIONS

- What is meant by the term *wages*? What is the difference between real wages and nominal wages?
- How does the level of wages in the United States compare with that in other nations?
- Explain why the productivity of the U.S. labor force has increased to its present high level.
- Why has the level of real wages continued to increase even though the supply of labor has continually increased?
- In the competitive model, what determines the market demand for labor and the wage rate? What kind of supply situation do all firms as a group confront? What kind of supply situation does the individual firm confront? Why?
- In the monopsony model, what determines employment and the wage rate? What kind of supply situation does the monopsonist face? Why? How do the wage rate paid and the level of employment compare with what would result if the market were competitive?
- In what sense is a worker who is hired by a monopsonist "exploited" and one who is employed in a competitive labor market "justly" rewarded? Why do monopsonists wish to restrict employment?
- When supply is less than perfectly elastic, marginal labor cost is greater than the wage rate. Why?
- What political methods do labor unions use to try to increase the wages their members receive? Give examples.
- When labor unions attempt to restrict the supply of labor to increase wage rates, what devices do they use to do this for the economy as a whole, and what means do they use to restrict the supply of a given type of worker?
- How do industrial unions attempt to increase wage rates, and what effect does this method of increasing wages have on employment in the industry affected?
- Both exclusive and inclusive unions are able to raise the wage rates their members receive. Why might unions limit or temper their demands for higher wages? What two factors determine the extent to which they will or will not reduce their demands for higher wages?
- Have U.S. unions been successful in raising the wages of their members? Evaluate the evidence on wages and employment effects.
- What is bilateral monopoly? What determines wage rates in a labor market of this type?
- Using supply and demand graphs, describe the effect of minimum wage laws on wage rates and employment in (a) purely competitive labor markets and (b) monopsony labor markets.
- Offer an evaluation of the employment and antipov-erty effects of the minimum wage based on past and current evidence.
- What is meant by the term "noncompeting" groups in a labor market? What two factors tend to explain wage differentials in noncompeting groups?
- How are wages used to equalize differences in the characteristics of jobs? Give examples.
- Describe four types of imperfections in labor markets. Discuss how these imperfections contribute to wage differentials.
- Explain what is meant by the principal-agent problem, and relate it to shirking. What are the different pay incentive plans that correct for shirking on the job? How does profit sharing reduce shirking? What is the reason for efficiency wages?

## ANSWERS

### Chapter 13 Wage Determination

#### FILL-IN QUESTIONS

- wage, wage, multiplied, nominal, real
- strong, capital, natural, labor force, technology, long-run
- a. higher, opportunity cost; b. revenue product; c. equal to
- elastic, equal to
- equal to, greater, less
- a. divided; b. equal to, divided, 1
- lower, less
- demand for, supply of, an above
- demand for, increasing, decreasing
- exclusive, inclusive, a craft, an industrial
- decrease, decrease, inelastic
- less, greater, wage rate
- increase, decrease, increase, increase, uncertain
- are not, vary, imperfect
- noncompeting, ability, human capital
- nonmonetary, compensating
- job, immobility, restraints, discrimination
- principals, agents, profits, wages
- shirking, performance, pay
- piece, efficiency, negative

#### TRUE-FALSE QUESTIONS

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|-------------------|--------------------|
| 1. F, p. 270      | 6. T, pp. 272-274  |
| 2. F, p. 270      | 7. T, pp. 272-274  |
| 3. T, pp. 270-271 | 8. T, pp. 274-276  |
| 4. T, pp. 271-272 | 9. T, pp. 276-277  |
| 5. F, p. 272      | 10. F, pp. 276-277 |